

## 2M Transmission Analyzer CA6038

### Introduction:

The 2M Transmission Analyzer CA6038 is a multi-functional and full-featured digital transmission system test device, designed for the installation test, engineering check and acceptance, daily maintenance of digital networks, mainly performing channel test, alarm analysis, fault finding and signalling analysis. In addition, this instrument further provides various protocol converters with one-way and bi-directional bit error test function. These capabilities make it ideal for field use.



### Basic Functions:

#### 1) 2M testing

- 75Ω and 120Ω line interfaces
- HDB3 and AMI line codes
- Out-of-service 2Mb/s, N×64kb/s BER testing
- In-service framed and unframed double-channel testing
- “PCM simulator” mode testing
- Frame data control and monitoring
- Timeslot activity monitoring, FAS, N-FAS, TS16MFO analysis
- Built-in 64kb/s tone channel listen capability
- CAS and CCS signaling generation and monitoring
- Round trip delay measurement
- APS delay measurement
- Extensive error and alarm generation
- VF tone generation and measurement
- Level measurement
- Pulse mask measurement
- Jitter measurements to ITU-T standard O.172
- Frequency and offset measurement
- Clock slip measurement
- Up to ±999ppm transmit clock deviation
- Clock source: Internal, Interface or External 2M clock/signal
- Real-time transmit circuit open/short indication

#### 2) Datacom testing

Datacom (V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530

and EIA-530A) interfaces BER Testing  
 ASYNC BER testing with baud rate 300b/s~38.4Kb/s  
 SYNC BER testing with data rate 300b/s~8Mb/s  
 DTE or DCE emulation  
 SYNC clock source and sense selection  
 Frequency measurement  
 Handshaking signals control and monitoring

#### 3) G.703 CO testing

G.703 CO 64kb/s BER testing  
 Octet timing control and monitoring  
 Frequency and offset measurement  
 Clock source: Internal, Interface selectable

#### 4) Protocol converter testing

2M-Datacom SYNC 64k or N×64kb/s BER testing  
 2M-G.703 CO SYNC 64kb/s BER testing  
 Frequency and offset measurement  
 Handshaking signals monitoring  
 2M frame data and alarm monitoring

#### 5) Other functions

Real-time clock  
 Test pattern: PRBS, Fixed Code and 16-BIT User Word  
 Error injection: Single and Fixed Rate  
 Manual and auto-timer measurement  
 ITU-T G.821, G.826, and M.2100 performance analysis

### Main Features:

- Handheld design and easy-to-use
- Full-featured measurements to 2M, Datacom
- High resolution backlit large LCD screen, with adjustable contrast
- Smart navigation mode and multi-languages displays
- Extensive error and alarm generation, detection and indication
- Histograms analysis of alarm and error events
- Up to 99 days continuance test performance
- Save/Recall of up to 7 user-defined setups and 70 sets of results
- Up to 6 hours operation from a single battery charge
- Built-in Li rechargeable battery and smart charger circuit
- Can be charged with automobile cigarette lighter battery adapter
- Ungradable software via an integrated RS232C interface
- Test results uploaded, conserved and printed by PC Manager software



## CA Optronics Group, Inc.

Address: 37498 Glenmoor Dr. Fremont, CA 94536, USA

TEL: +1-510-366-7353 FAX: +1-510-353-1809

WEB: www.caoptronicsgroup.com

## Specifications:

Item	Description		
<b>2M</b>	Internal Clock	2048kb/s $\pm$ 10ppm	
	Frequency Deviation	$\pm$ 999ppm	
	Line Interface	75 $\Omega$ (Unbalanced), 120 $\Omega$ (Balanced); High Input Impedance >2KW	
	Line Code	HDB3, AMI	
	Framing	Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC	
	Receive Sensitivity	> -43dB	
	Tx Clock Source	Internal, Interface and External 2MHz clock or signal	
	Pulse Mask Measurement	Comply with G.703	
	Jitter Measurement	Comply with O.172	
	Frequency Measurement	Accuracy: $\pm$ 1Hz	
	Offset Measurement	Accuracy: $\pm$ 1ppm Range: -999ppm~+999ppm	
	VF Injection	Frequency: 200Hz~3400Hz, Step: 10Hz	
		Level: -60dBm~+3dBm	
	VF Measurement	Frequency: 200Hz~3400Hz, Accuracy: $\pm$ 1Hz	
Level range :-60.00dBm~+3.14dBm -60.00dBm~-21.00dBm, accuracy: $\pm$ 2.87dBm -20.00dBm~+3.14dBm, accuracy: $\pm$ 0.21dBm			
Delay Measurement		Accuracy: $\pm$ 1 $\mu$ s	
<b>G.703 CO</b>	Line Rate	64kb/s $\pm$ 100ppm	
	Line Interface	120 $\Omega$ , Balanced	
	Line Code	AMI	
<b>Datacom</b>	Line Interfaces	V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530, EIA-530A	
	Data Rate	ASYNC	300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s
		SYNC	300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s, N $\times$ 64kb/s ( N=1~32),4M,8Mkb/s
<b>Test Patterns</b>	PRBS	2 <sup>23</sup> -1, 2 <sup>20</sup> -1, 2 <sup>15</sup> -1, 2 <sup>11</sup> -1, 2 <sup>9</sup> -1, 2 <sup>6</sup> -1	
	Fixed Code	1111, 0000, 1010	
	16-BIT	User Programmable Word	
<b>LED Alarm Indicators</b>	Signal Loss, AIS, Frame Loss, MFrame Loss, Pattern Loss, Remote Alarm, Error, Clock Slip.		
<b>Error Injection</b>	Type: BIT, FAS, CRC4, CODE, E-BIT		
	Single, Fixed Rate : 10 <sup>-2</sup> , 10 <sup>-3</sup> , 10 <sup>-4</sup> , 10 <sup>-5</sup> , 10 <sup>-6</sup> , 10 <sup>-7</sup>		
<b>Performance Analysis</b>	ITU-T G.821, G.826 and M.2100		
<b>Display</b>	320x240 pixel backlit monochromatic LCD		
<b>Serial Port</b>	RS-232C		
<b>Rechargeable Batteries</b>	5 $\times$ 1.2V AA NiMH batteries, continuous working for 6 hours		
<b>Recharge Time</b>	Approx. 2 hours		
<b>AC Power Adapter</b>	Input: 100V~240VAC, 50/60Hz Output: 12VDC/1.5A		
<b>TestManager Pro</b>	WIN98/ME/NT/2000/XP		
<b>Dimensions</b>	L $\times$ W $\times$ H 200mm $\times$ 160mm $\times$ 45mm		

## CA Optronic Group, Inc.

Address: 37498 Glenmoor Dr. Fremont, CA 94536, USA

TEL: +1-510-366-7353 FAX: +1-510-353-1809

WEB:www.caoptronicsgroup.com

**Ordering Information:**

*Standard Accessories:*

Standard Items	Unit	Qty.	Standard Items	Unit	Qty
2M Transmission Analyzer	pcs.	1	Simulation software	pcs.	1
75Ω BNC/L9 E1 test cable	pcs.	2	Carrying case	pcs.	1
BNC/BNC cable	pcs.	1	User's manual	pcs.	1
RS232 serial upgrading cable	pcs.	1	Warranty card	pcs.	1
DATA converting line(36PIN to 44PIN)	pcs.	1	Certificate of conformity	pcs.	1
X.21 testing line	pcs.	1	V.35 testing line	pcs.	1
V2.4 testing line	pcs.	1	V.11 testing line	pcs.	1
			AC adapter	pcs.	1

*Optional Accessorie:*

120 testing line	pcs.	2	64K testing lines	pcs.	1
------------------	------	---	-------------------	------	---